

REMARKS

The foregoing amendments and these remarks are in response to the Final Office Action dated June 6, 2006. This amendment is filed with a Request for Continued Examination, a request for a three month extension of time and authorization to charge Deposit Account No. 50-0951 for the appropriate extension fees.

At the time of the Office Action, claims 1-14 were pending. In the Office Action, claim 7 was rejected under 35 U.S.C. §112, first paragraph. Claims 5-8 were rejected under 35 U.S.C. §112, second paragraph. Claims 1-7, 11 and 12 were rejected under 35 U.S.C. §102(e). Claims 10, 13 and 14 rejected under 35 U.S.C. §103(a). Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The rejections are discussed in more detail below.

I. Claim Rejections under 35 U.S.C. §112

Claim 7 was rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. Claims 5-8 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant has amended the claims in a manner believed to overcome the rejections, and notes that the subject matter of original claim 8 is explained in the specification on page 7, lines 4-13. Withdrawal of the rejections is thus respectfully requested.

II. Rejections on Art

Claims 1-7, 11 and 12 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Publication No. 2004/0039520 to Khavakh et al. ("Khavakh"). Claim 10 was rejected under 35 U.S.C. §103(a) as being unpatentable over Khavakh as applied to claim 9, and further in view of U.S. Patent No. 5,170,353 to Verstraete ("Verstraete"). Claims 13 and 14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Khavakh as applied to claim 1, and further in view of U.S. Patent No. 5,610,821 to Gazis et al. ("Gazis").

Applicant notes that Khavakh teaches a rank suppression system in a navigation application, which is quite different from the road segment selection defined in amended claim 1. In order to highlight differences between the system of Khavakh and the method of claim 1, Applicant provides the following illustrative figures setting out part of the method used in amended claim 1. An exemplary road network is shown in figure 1 below, which contains nodes A1-A7.

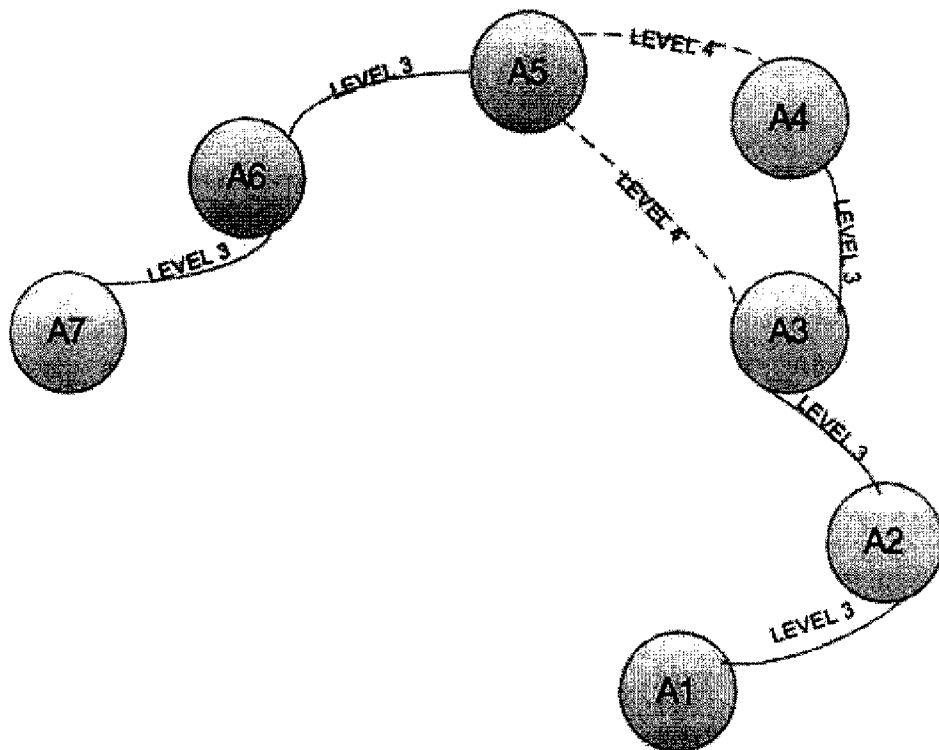


Figure 1

Amended claim 1 recites "wherein the segments are classified according to a plurality of network levels; during the development of at least one of two graphs". According to Khavakh, paragraphs 139 and 153, the roadways are classified by rank in accordance with the importance or significance of the roadway for vehicle travel. In the present application, the classification block 13 classifies the road segments according to several levels such as streets, roads and highway. As represented in exemplary figure 1, the nodes may be connected by segments classified according to two levels: level three and level four.

Amended claim 1 further recites "wherein a group of successive segments with a given level m is sought, each group comprising exclusively intermediate nodes which do not belong to any other segment with a level which is at least equal to m; and the group of successive segments is substituted by a single segment with the given level m". Thus, in order to determine the minimal cost between two points (A, B), groups of successive segments are substituted with a single segment. The road network is in this way transformed in a virtual network.

For example, as shown in figure 2 below, all successive segments with a level "3" are detected and gathered in groups of successive segments. The groups (G1, G2) comprising the nodes A5-A7 and the nodes A1-A4 are circled. The intermediate nodes (A2, A3, A6) of the successive segments are analysed to check if they belong to any segment with a level at least equal to 3, other than those of the group of successive segments (G1, G2).

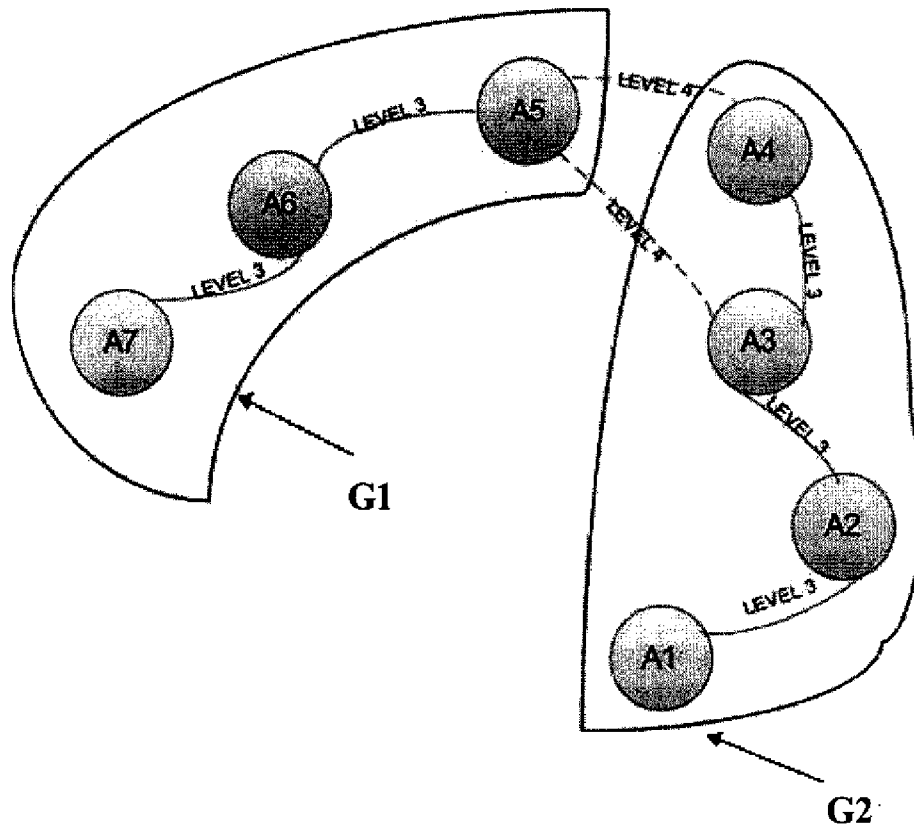


Figure 2

As represented in figure 2, the intermediate node A3 is connected to the node A5 by a segment of level four, which is bigger than level three. The node A3 cannot be considered as an intermediate node of the group G2, and G2 is thus not a valid group of successive segments.

As node A3 does not qualify as an intermediate node, it is considered to be an end node for a redrawn group, G3. Thus, as shown in figure 3 below, only two groups of successive segments (G1, G3) can be substituted by a single segment of level three.

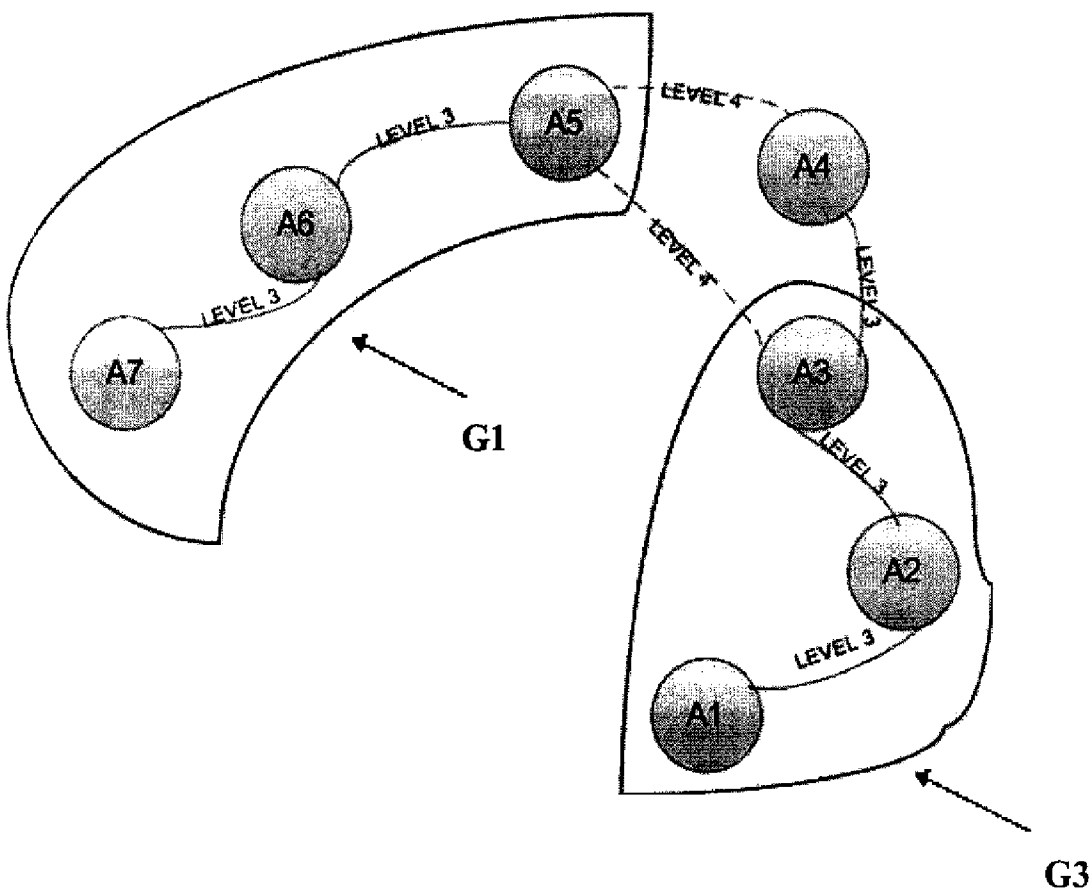


Figure 3

Amended claim 1 further recites "the number of segments of the graph of a lowest level m_{inf} is calculated; and starting from a predefined threshold of number of segments of level m_{inf} , said at least one of the two path graphs is developed taking into account only the segments which belong to the levels which are strictly higher than the level m_{inf} ". Grouping successive segments with a given level and substituting them with a single segment of rank m allows speeding up the development of the graphs. The number of segments of the graph developed of the lowest level m_{inf} is calculated, each graph having its own m_{inf} , the number m_{inf} being also well defined. The predefined threshold is reached later during the development of the graph, with segment substitution. For example, the group G1 counts as two segments before segment substitution and counts as one segment after segments substitution.

As shown in figure 4, the resulting road network has fewer segments which simplifies the development of the graphs.

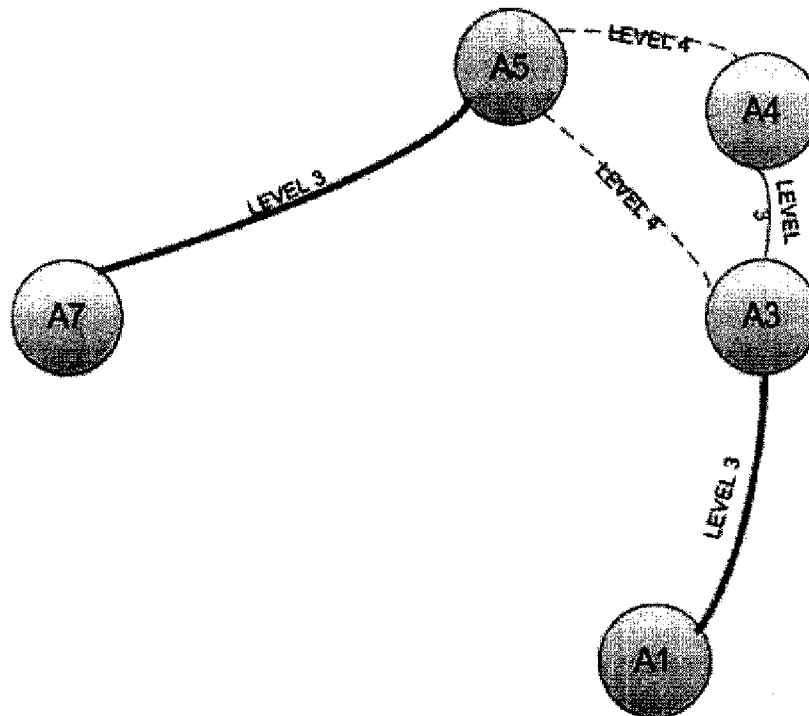


Figure 4

The new road network, represented in figure 4, is different from the network of Kavakh after rank suppression. The network of the present application is virtual and does not rely on physical segments and nodes. The equivalent segments are gathered to build a logical network which simplifies the development of the two paths. As shown in figure 4, in the virtual network, the nodes A5 and A7 are connected by a segment despite the fact that they are not physically connected. For the foregoing reasons, Kavakh is not relevant against amended claim 1, and does not teach or suggest the claimed method.

With regard to claim 10, the use of a bucket algorithm is not obvious regarding Verstraete, because in the case of two graphs, a simple development of the algorithm such as in Verstraete does not allow obtaining the minimal cost between two points (A, B). The development of two

bucket algorithms is far more efficient but far more complex especially if the algorithm includes road segments selection as disclosed in amended claim 1.

With regard to claims 13 and 14, these claims are not obvious from Khavakh in view of Gazis. Gazis only discloses a base unit equipped with a complete database of road segments for the entire nation (column 3, lines 20-22) which is quite different from the virtual network where all the segments of different levels are connected. Furthermore, the attributes of the road segments of the database (column 3, lines 30-31) do not infer a modification of the virtual network (page 11, lines 17-18).

For the foregoing reasons, claim 1 is believed to relate to patentable subject matter and to be in condition for allowance. The dependent claims are believed allowable for the foregoing reasons, for their dependence upon an allowable base claim, and because of the further features recited.

III. Conclusion

Applicants have made every effort to present claims which distinguish over the prior art, and it is thus believed that all claims are in condition for allowance. Nevertheless, Applicants invite the Examiner to call the undersigned if it is believed that a telephonic interview would expedite the prosecution of the application to an allowance. In view of the foregoing remarks, Applicants respectfully request reconsideration and prompt allowance of the pending claims.

Respectfully submitted,

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